EJERCICIO VECTORES EN EL PLANO

Determine $\boldsymbol{u}+\boldsymbol{v}$, $\boldsymbol{u}-\boldsymbol{v}$, $2\boldsymbol{u}$ y $3\boldsymbol{u}-2\boldsymbol{v}$.

(a) $\boldsymbol{u}=(2,3)$, $\boldsymbol{v}=(-2,5)$

(b) $\boldsymbol{u}=(0,3)$, $\boldsymbol{v}=(3,2)$

(c) $\boldsymbol{u}=(2,6)$, $\boldsymbol{v}=(3,2)$

Solución

(a)

```
sage] u= vector([2,3])
sage] v= vector([-2,5])
sage] u+v
```

$(\mathbf{0},\mathbf{8})$

```
sage] u-v
```

$(\mathbf{4},-\mathbf{2})$

```
sage] 2*u
```

$(\mathbf{4},\mathbf{6})$

```
sage] 3*u-2*v
```

$(\mathbf{10},-\mathbf{1})$

(b)

```
sage] u= vector([0,3])
sage] v= vector([3,2])
sage] u+v
```

$(\mathbf{3},\mathbf{5})$

```
sage] u-v
```

$(-\mathbf{3},\mathbf{1})$

```
sage] 2*u
```

$(\mathbf{0},\mathbf{6})$

```
sage] 3*u-2*v
```

$(-\mathbf{6},\mathbf{5})$

(c)

```
sage] u= vector([2,6])
sage] v= vector([3,2])
sage] u+v
```

$(\mathbf{5},\mathbf{8})$

```
sage] u-v
```

$(-\mathbf{1},\mathbf{4})$

```
sage] 2*u
```

$(\mathbf{4},\mathbf{12})$

```
sage] 3*u-2*v
```

$(\mathbf{0},\mathbf{14})$